UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

OCT 8 - 2014

Ms. Myra Reece
Chief, Bureau of Air Quality Control
South Carolina Department of Health and
Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

Dear Ms. Reece:

Thank you for submitting the state of South Carolina's 2014 annual ambient air monitoring network plan (Network Plan) dated July 3, 2014. The Network Plan is required by 40 Code of Federal (CFR) Regulations §58.10.

The U.S. Environmental Protection Agency Region 4 understands that the South Carolina Department of Health and Environmental Control (SC DHEC) provided the public a 30-day review period for its draft Network Plan. Comments on the draft plan were submitted by six stakeholders and the final Network Plan includes the SC DHEC response to these comments.

With this letter, the EPA Region 4 is approving the Network Plan provided that the following changes are made:

1. An ozone (O_3) monitoring site must be established in the Myrtle Beach-Conway-North Myrtle Beach, SC-NC Metropolitan Statistical Area (MSA) by the beginning of the 2015 ozone monitoring season.
2. Air Quality Index reporting for the Myrtle Beach-Conway-North Myrtle Beach, SC-NC MSA must be initiated once the O_3 monitoring site is established.

Details regarding our review of the Network Plan are provided in the enclosed comments.

Thank you for working with us to monitor air pollution and promote healthy air quality in South Carolina. If you have any questions or concerns, please contact Gregg Worley at (404) 562-9141 or David McNeal at (404) 562-9102.

Sincerely,

Carol L. Kemker for

Beverly H. Banister
Director
Air, Pesticides and Toxics
Management Division

Enclosure

cc: Mr. Robert Brown
Division Director, Air Planning Development
and Outreach, SC DHEC

Mr. Scott Reynolds
Director, Division of Air Quality Analysis, SC DHEC

Mr. Thomas Flynn
Manager, Air Data Analysis and Support Section, SC DHEC

The Honorable William Harris
Chief of the Catawba Indian Nation

Mr. Darin Steen
Director, Environmental Services, Catawba Indian Nation

CY 2014 State of South Carolina Ambient Air Monitoring Network Plan
The U.S. EPA Region 4 Comments and Recommendations

This document contains the U.S. EPA Region 4 comments and recommendations regarding the state of South Carolina's 2014 ambient air monitoring network plan (Network Plan). Ambient air monitoring rules, which address network plans, data certification, and minimum monitoring requirements, among other requirements, are found in 40 CFR part 58. Minimum monitoring requirements for criteria pollutants are listed in 40 CFR part 58, appendix D. Minimum monitoring requirements are listed for ozone (O_3), particulate matter less than 2.5 microns ($PM_{2.5}$), particulate matter less than 10 microns (PM_{10}), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), carbon monoxide (CO), and lead (Pb).

The minimum monitoring requirements are based on core based statistical area (CBSA) boundaries as defined by the U.S. Office of Management and Budget (OMB), July 1, 2013, population estimates from the U.S. Census Bureau, and historical ambient air monitoring data. Minimum monitoring requirements for O_3, $PM_{2.5}$, and PM_{10} only apply to metropolitan statistical areas (MSAs) which are a subset of CBSAs. OMB currently defines 10 MSAs in the state of South Carolina. These MSAs and the respective July 1, 2013, population estimates from the U.S. Census Bureau are shown in Table 1.

Table 1: Metropolitan Statistical Areas and Populations

MSA Name	Population
Charlotte-Gastonia-Concord NC-SC	2,335,358
Greenville-Anderson-Mauldin, SC	850,965
Columbia, SC	793,779
Charleston-North Charleston-Summerville, SC	712,220
Augusta-Richmond County, GA-SC	580,270
Myrtle Beach-Conway-North Myrtle Beach, SC-NC	404,951
Spartanburg, SC	318,999
Florence, SC	206,261
Hilton Head Island-Bluffton-Beaufort, SC	198,467
Sumter, SC	108,123

Minimum O_3 Monitoring Requirements
40 CFR part 58, appendix D, table D-2

Region 4 has determined that the O_3 monitoring network outlined in the Network Plan meets the minimum requirements found in 40 CFR part 58, appendix D, table D-2 for nine of the MSAs in South Carolina. Due to changes that OMB made to MSA boundaries in February of 2013, Brunswick County, North Carolina has been added to the Myrtle Beach-Conway-North Myrtle Beach, SC-NC MSA. This change triggered the requirement for an O_3 monitor in the MSA, and the 2014 Network Plan indicates that the SC DHEC has entered into discussions with North Carolina and other stakeholders to identify an appropriate location for a new monitoring site.

Since the need for an O_3 monitoring site in the Myrtle Beach-Conway-North Myrtle Beach, SC-NC MSA has been known since early 2013, Region 4 believes that a reasonable deadline for beginning the required monitoring would be the beginning of the 2015 ozone season (April 2015).

Minimum PM_{10} Monitoring Requirements
40 CFR part 58, appendix A, 3.3.1
40 CFR part 58, appendix D, table D-4

Region 4 has determined that the PM_{10} monitoring network outlined in the Network Plan meets or exceeds the minimum requirements found in 40 CFR part 58, appendix D, table D-4 for all MSAs. Also, all manual PM_{10} collocation requirements are met.

Minimum $PM_{2.5}$ Monitoring Requirements
40 CFR part 58, appendix A, 3.2.5
40 CFR part 58, appendix D, table D-5

Region 4 has determined that the $PM_{2.5}$ monitoring network outlined in the Network Plan meets or exceeds the minimum requirements found in 40 CFR part 58, appendix D, table D-5 for all MSAs. Also, all $PM_{2.5}$ collocation requirements are met.

$PM_{2.5}$ Continuous Monitoring Requirements
40 CFR part 58, appendix D, 4.7.2

Regulatory provisions for continuous $PM_{2.5}$ monitoring require that "The State, or where appropriate, local agencies must operate continuous $PM_{2.5}$ analyzers equal to at least one-half (round up) of the minimum required sites listed in Table D–5 of this appendix. At least one required continuous analyzer in each MSA must be collocated with one of the required FRM/FEM/ARM [Federal Reference Method/Federal Equivalent Method/Approved Regional Method] monitors, unless at least one of the required FRM/FEM/ARM monitors is itself a continuous FEM or ARM monitor in which case no collocation requirement applies." After review of the Network Plan, Region 4 has determined that the proposed $PM_{2.5}$ continuous monitoring network meets or exceeds the minimum requirements in all of the MSAs in the state. Also, the continuous $PM_{2.5}$ collocation requirements are met in all MSAs.

$PM_{2.5}$ Background and Transport Sites
40 CFR part 58, appendix D, 4.7.3

40 CFR part 58, appendix D, 4.7.3 requires that "Each State shall install and operate at least one $PM_{2.5}$ site to monitor for regional background levels and at least one $PM_{2.5}$ site to monitor for regional transport." The 2014 Network Plan identifies Ashton (AQS ID 45-029-0002) in Colleton County as a regional background site and Chesterfield (AQS ID 45-025-0001) in Chesterfield County as a regional transport site. Therefore, the SC DHEC has satisfied the requirements of 40 CFR part 58 for regional background and transport sites.

$PM_{2.5}$ Chemical Speciation Network

The EPA has been conducting an assessment of the Chemical Speciation Network (CSN) in an effort to optimize the network and create a network that is sustainable going forward. As a result of this assessment, EPA is recommending defunding a number of monitoring sites, eliminating the CSN $PM_{2.5}$ mass measurement, reducing the frequency of carbon blanks, reducing sample frequency at monitoring sites, and reducing the number of icepacks in shipments during the cooler months of the year.

The EPA is currently soliciting feedback regarding their recommendations. Should these recommendations become final, the CSN monitors at the Chesterfield (AQS ID 45-025-0001) and the Greenville ESC (AQS ID 45-045-0015) sites would need to be shutdown. The CSN $PM_{2.5}$ mass measurement is recommended for elimination in July 2014 and all other changes are recommended to take place in January 2015. Final changes to the CSN in the state of South Carolina will need to be reflected in the 2015 Network Plan.

Pb Monitoring Requirements
40 CFR part 58, appendix D, 4.5

40 CFR part 58, appendix D, 4.5 requires that "At a minimum, there must be one source-oriented SLAMS [State and Local Air Monitoring Station] site located to measure the maximum Pb concentration in ambient air resulting from each non-airport Pb source which emits 0.50 or more tons per year and from each airport which emits 1.0 or more tons per year..."

Although South Carolina has no sources that exceed the thresholds for Pb monitoring, the Johnson Control Battery Group conducts source-based ambient Pb monitoring at three sites around the Florence Recycling Center in Florence, South Carolina. The company is conducting this monitoring under terms of a settlement agreement reached with several petitioners who commented on the construction permit for the facility. Locations for the monitoring sites were selected based upon an agreement between the company and the stakeholders. According to the 2014 Network Plan, a collocated Pb monitor has been added to one of the three existing sites for quality assurance purposes.

40 CFR part 58, appendix D, 3(b) requires that "NCore sites in CBSAs with a population of 500,000 people (as determined in the latest Census) or greater shall also measure Pb either as Pb-TSP or Pb-PM_{10}." The Network Plan indicates that a Pb sampler is located at the Parklane NCore site (AQS ID 45-079-0007).

The Pb monitoring network described in the Network Plan meets all of the design criteria of 40 CFR part 58.

Sulfur Dioxide (SO_2) Monitoring Requirements
40 CFR part 58, appendix D, 4.4

Ambient air monitoring network design criteria for SO_2 are found in section 4.4 of 40 CFR part 58, appendix D. This section requires that "The population weighted emissions index (PWEI) shall be calculated by states for each core-based statistical area (CBSA)..." As a result, the SO_2 monitoring site(s) required in each CBSA will satisfy minimum monitoring requirements if the monitor(s) is sited within the boundaries of the parent CBSA and is of the following site types: population exposure, maximum concentration, source-oriented, general background, or regional transport. An SO_2 monitor at an NCore station may satisfy minimum monitoring requirements if that monitor is located within a CBSA with minimally required monitors consistent with appendix D, section 4.4. Based upon PWEIs calculated using the latest population estimates and emission inventory data, the minimum number of monitors required for the CBSAs in South Carolina is summarized in Table 2.

Table 2: SO_2 Monitoring System Status

CBSA Name	SLAMS required	SLAMS present
Augusta-Richmond County, GA-SC	1	1
Charleston-North Charleston-Summerville, SC	1	1
Charlotte-Gastonia-Concord NC-SC	1	1
Columbia, SC	1	1
Greenville-Anderson-Mauldin, SC	1	1

Based upon the information summarized in Table 2, the SO_2 monitoring network outlined in the Network Plan meets the design criteria specified in section 4.4 of appendix D to 40 CFR part 58.

NO_2 Monitoring Requirements
40 CFR part 58, appendix D, 4.3

Ambient air monitoring network design criteria for NO_2 are found in Section 4.3 of appendix D to 40 CFR part 58. Three types of NO_2 monitoring are required: near-road, area-wide, and Regional Administrator. These types of NO_2 monitoring are described in sections 4.3.2, 4.3.3 and 4.3.4, respectively.

Ambient air monitoring design criteria for near-road NO_2 monitoring sites are found in section 4.3.2 of appendix D to 40 CFR part 58. The requirement for near-road monitoring in the Charlotte-Gastonia-Concord NC-SC CBSA will be met using the Remount site (AQS ID 37-119-0045) operated by Mecklenburg County's Land Use and Environmental Services Agency (MCLUESA) in Charlotte, North Carolina. No other CBSA in South Carolina is currently required to have near-road NO_2 monitoring. By January, 1 2017, South Carolina CBSAs with populations over 500,000 will be required to operate near-road NO_2 monitoring.

Ambient air monitoring network design criteria for area-wide NO_2 sites are found in section 4.3.3 of appendix D to 40 CFR part 58. The Garinger High School site (AQS ID 37-119-0041) currently operated by MCLUESA will be used for fulfilling the area-wide NO_2 monitoring requirement for the Charlotte-Gastonia-Concord NC-SC CBSA. No other CBSA in South Carolina is required to have an area-wide NO_2 monitor.

Ambient air monitoring network design criteria for Regional Administrator required NO_2 monitoring, often referred to as RA-40 monitoring, are found in section 4.3.4 of appendix D to 40 CFR part 58. Under these provisions Regional Administrators must require a minimum of 40 additional NO_2 monitoring stations nationwide, with a primary focus on siting these monitors in locations to protect susceptible and vulnerable populations. As part of last year's Network Plan review, Region 4 selected the Greenville ESC site (AQS ID 450-045-0015) as a RA-40 NO_2 monitoring site.

Air Quality Index (AQI) Reporting
40 CFR §58.50

AQI reporting is required in MSAs with populations over 350,000. Four MSAs in the state of South Carolina are required to report an AQI: Greenville-Anderson-Mauldin, Columbia, Charleston-North Charleston, and Myrtle Beach-Conway-North Myrtle Beach, SC-NC. The Network Plan on Page 3 indicates that the daily AQI for all of these areas except the Myrtle Beach-Conway-North Myrtle Beach, SC-NC MSA is available on EPA's AIRNow web site. Once an O_3 monitoring site is added to the Myrtle Beach-Conway-North Myrtle Beach, SC-NC MSA in order to satisfy the minimum requirements in 40 CFR part 58, AQI reporting should also be initiated.

Proposed Monitoring Network Changes

SC DHEC has proposed nine monitoring network changes which are summarized in Table 3.

Table 3: Proposed Monitoring Network Changes

AQS ID	Site Name	Pollutant	Type	Comments
45-019-0003	Jenkins Ave Fire Station	SO_2	SLAMS	Editorial correction
45-091-0006	York	SO_2	SPM	Change designation
45-063-0008	Irmo	SVOCs	Non-regulatory	Change objective
45-063-0008	Irmo	Carbonyls	Non-regulatory	Change objective
45-045-0015	Greenville ESC	NO_2	SLAMS	Change designation
45-045-0015	Greenville ESC	SO_2	SLAMS	Change designation
45-077-0002	Clemson	O_3	SLAMS	Add monitor
45-025-0001	Chesterfield	$PM_{2.5}$ speciation	Supplemental	Discontinue monitoring
45-073-0001	Long Creek	$PM_{2.5}$	SPM	Change designation

The designation for the SO_2 monitor at the Jenkins Avenue Fire Station site (AQS ID 45-019-0003) was changed from SPM to SLAMS in order to correct an error in the previous Network Plan.

The Network Plan proposes to change the designation for the SO_2 monitor at the York site (AQS ID 45-091-0006) from SLAMS to SPM. The basis for this change is that there are currently two operational SO_2 SLAMS in the Charlotte-Gastonia-Concord CBSA, but only one is required due to substantial decreases in emissions that have lowered the PWEI in the CBSA. The other SO_2 SLAMS in the CBSA is located at the Garinger High School NCore site (AQS ID 37-119-0041) in Mecklenburg County, North Carolina. The York site has been in operation since January of 2012, and SO_2 concentrations at the site are consistently lower than at the Garinger High School site. Therefore, the proposal to change the SO_2 monitor designation at the York site to SPM is acceptable.

The objective for the semi-volatile organic compound (SVOC) and carbonyl monitors at the Irmo site (AQ ID 45-063-0008) was changed to non-regulatory in order to be consistent with the objective for the black carbon monitor located at the site.

The designation for the NO_2 monitor at the Greenville ESC site (AQS ID 45-045-0015) was changed from SPM to SLAMS to reflect its selection as an RA-40 NO_2 monitoring site.

The designation for the SO_2 monitor at Greenville ESC site (AQS ID 45-045-0015) was changed from SPM to SLAMS since the latest PWEI calculations indicate that an SO_2 SLAMS is required in the Greenville-Anderson-Mauldin MSA.

In its 2013 Network Plan, SC DHEC proposed to discontinue O_3 monitoring at the Clemson site (AQS ID 45-077-0002). Because this proposal was not approved, information regarding Clemson site was included in the 2014 Network Plan.

The Network Plan proposes to discontinue $PM_{2.5}$ speciation monitoring at the Chesterfield site (AQS ID 45-025-0001) if funding for this activity is discontinued by EPA.

The designation for the $PM_{2.5}$ monitor at the Long Creek site (AQS ID 45-073-0001) was changed from SLAMS to SPM due to the inadequate performance of the monitor. The Long Creek site is located in a county (Oconee) that is not part of a MSA for which minimum monitoring requirements are specified under 40 CFR part 58, appendix D.

Based upon our review, all of the proposed changes in the 2014 Network Plan are acceptable.

National Core (NCore) Monitoring Network
40 CFR part 58, appendix D, 3

A requirement that each state operate at least one NCore site is found in section 3 of 40 CFR part 58, appendix D. The state's approved NCore site is located at the Parklane site (AQS ID 45-079-00047) and the SC DHEC has not proposed any changes for the site in its 2014 Network Plan.